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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,351	11/13/2003	Xueping Xu	ATMI-685	1430

23448 7590 07/26/2006

INTELLECTUAL PROPERTY / TECHNOLOGY LAW
PO BOX 14329
RESEARCH TRIANGLE PARK, NC 27709

EXAMINER

SPEER, TIMOTHY M

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/712,351	Applicant(s) XU ET AL.	
	Examiner Timothy M. Speer	Art Unit 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2006.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-120 is/are pending in the application.
 4a) Of the above claim(s) 52-120 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-8 and 10-51 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In response to the after final response submitted 06/12/06, the grounds of rejection set forth in the final Office Action dated 04/12/06 are withdrawn. Accordingly, the finality of the previous Office Action is withdrawn and prosecution is reopened in favor of the new ground of rejection set forth herein.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-8 and 10-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over D'Evelyn (USPN 6,806,508).

D'Evelyn teaches III-V nitride materials, i.e., GaN, having a dislocation density of less than about 10^5 cm^{-2} (abstract and col. 6, lines 8-13, for instance). Accordingly, the materials of D'Evelyn have dislocation densities within the ranges recited in the present claims. D'Evelyn further teaches that the materials are formed as boules having varying lengths, e.g., about 0.05 cm to about 30 cm, and diameters, e.g., about 5 cm to about 15 cm (col. 4, lines 61-67, for example). Given these dimensions, D'Evelyn suggests materials having an area of at least 15 cm^2 , as presently claimed. To select a range of surface area from that disclosed by D'Evelyn would have been obvious to one having ordinary skill in the art, since D'Evelyn suggests such ranges. The materials of D'Evelyn may be used to form various electronic devices, such as optoelectronic devices, including photodetectors.

D'Evelyn teaches that the boules disclosed therein may be cut into wafers having a desired thickness, such as about 0.01 mm to 10 mm (col. 6, lines 14-32). Therefore, D'Evelyn suggests the thicknesses recited in instant claims 16 and 21-24. Additionally, D'Evelyn teaches that the materials may be polished and shaped according to methods known in the art, such as assisted ion beam etching and chemo-mechanical polishing (col. 6, lines 20-26).

Moreover, D'Evelyn teaches that the materials may include dopants, including n-type dopants such as silicon and oxygen (col. 9, lines 25-27).

Regarding the presently claimed characteristic of DDSDR set forth in claims 14-16 and 38-40, since the materials of D'Evelyn are the same as those presently claimed and have the same dislocation density, it is the Examiner's position that the materials will inherently exhibit the presently claimed DDSDR characteristics. Discovering an inherent property of a prior art material is not considered to be inventive.

In light of the above, it is the Examiner's position that the present claims are prima facie obvious in view of D'Evelyn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy M. Speer whose telephone number is 571-272-8385. The examiner can normally be reached on M-Th, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1775

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Timothy M. Speer



JENNIFER C. MCNEIL
SUPERVISORY PATENT EXAMINER

7/11/06